

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P#

Luminaire Tested: **FLDSQ4C75D010 FEU4C759035 F4LC-CSSQ-MMS**

Issue Date: 12/13/2022

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P#
 Test Lab: INNOVATION CENTER
 Issue Date: 12/13/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: FAIL-SAFE
 Catalog Number: FLDSQ4C75D010 FEU4C759035 F4LC-CSSQ-MMS
 Description: 4 INCH 7500 LUMEN FAIL-SAFE LED DOWNLIGHT WITH, 3500K, 90CRI LEDS AND F4LC-CSSQ TRIM WITH MMS FINISH
 Light Source: -
 Ballast/Driver: -

Summary

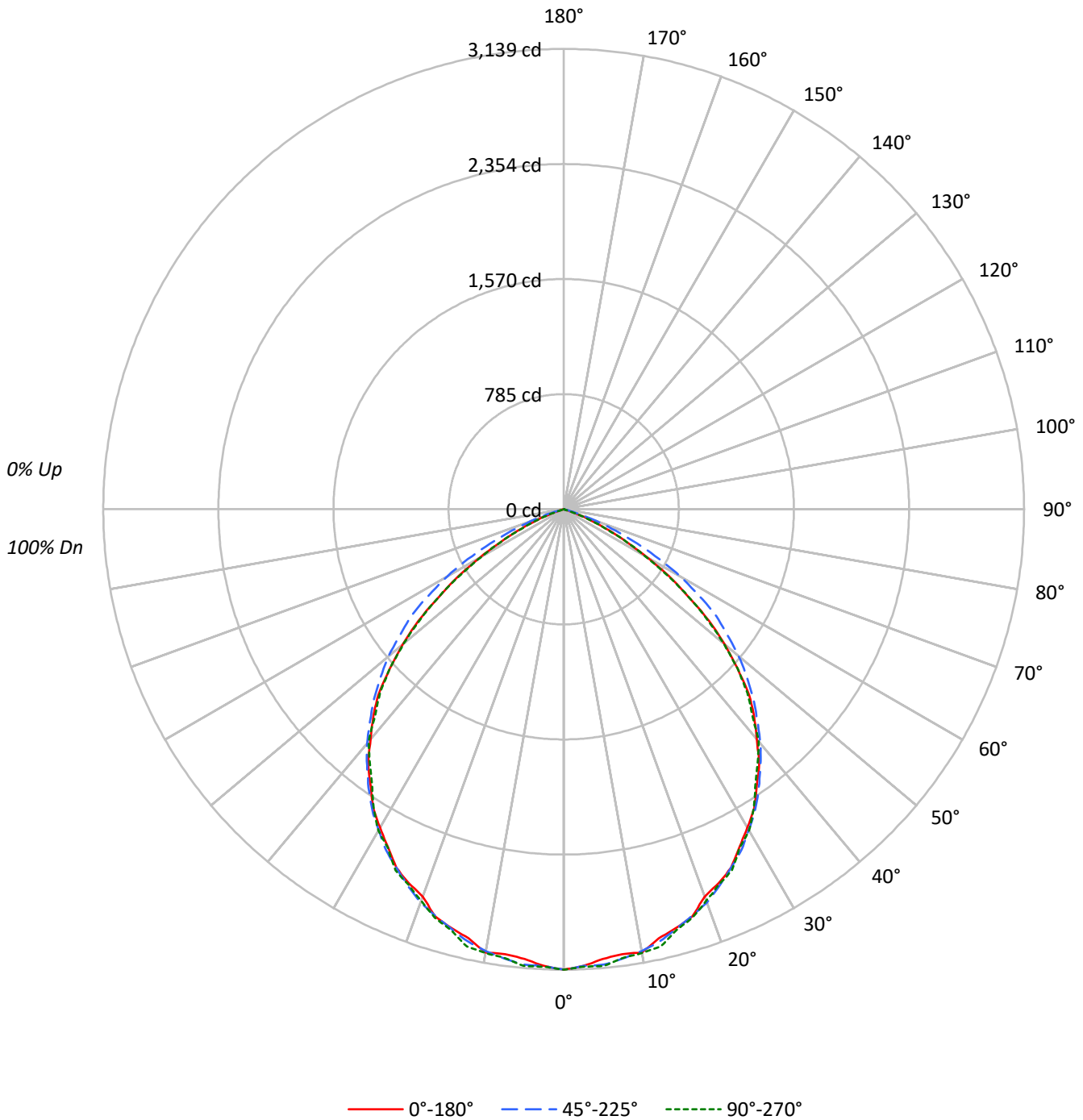
Lumens per Lamp: N/A
 Luminaire Lumens: 6705.0 lumens
 Efficiency: N/A
 Efficacy: 82.3 lumens/watt
 Spacing Criteria (0/90/45): 1.19 / 1.2 / 1.29
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 81.5
 Input Voltage (V):
 Input Current (Ain): NR
 Voltage Rise (V): NR
 Power Factor: NR
 Total Harmonic Distortion (THDi): NR
 Frequency (hertz): 60
 Stabilization Time: NR
 Operation Time: NR
 Ambient Temperature (°C): NR
 Test Distance: 25 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	GONIO 1 IN0055	4/22/2021	10/22/2021
Power Meter	XITRON 2801 IN0197	12/1/2020	12/1/2021
AC Power Source	CHROMA 61505 IN0196	12/1/2020	12/1/2021
DC Power Supply	AGILENT E3634A IN0198	11/30/2020	11/30/2021
Room Thermometer	ONSET IN0143	12/1/2020	12/1/2021

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100
1	111	108	104	101	109	105	102	100	101	99	96	97	95	94	94	92	91	89				89
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77				77
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67				67
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59				59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52				52
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46				46
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41				41
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37				37
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	33				33
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	31				31

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	302859	302859	302859
5°	297972	301847	302718
10°	300546	299674	300977
15°	295283	295722	296611
20°	288411	292991	291625
25°	287165	287165	289070
30°	279163	281147	281659
35°	270449	273087	268352
40°	257772	262810	260568
45°	243956	249441	241527
50°	214838	233571	213502
55°	173993	213744	174767
60°	127327	177250	124760
65°	77375	126211	75343
70°	30186	67933	28945
75°	3318	18305	3318
80°	2500	2500	2500
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	296.3	4.4
10°-20°	838.4	12.5
20°-30°	1244.0	18.6
30°-40°	1441.4	21.5
40°-50°	1382.0	20.6
50°-60°	1016.1	15.2
60°-70°	438.9	6.5
70°-80°	47.4	0.7
80°-90°	0.6	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2378.6	35.5
0°-40°	3820.0	57.0
0°-60°	6218.1	92.7
0°-90°	6705.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6705.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3139	3139	3139	3139	3139	
5°	3076	3108	3116	3121	3125	294
15°	2956	2974	2960	2965	2969	833
25°	2697	2693	2697	2702	2715	1235
35°	2296	2310	2318	2314	2278	1436
45°	1788	1792	1828	1801	1770	1359
55°	1034	1141	1271	1137	1039	931
65°	339	424	553	419	330	348
75°	9	14	49	9	9	27
85°	0	0	0	0	0	1
90°	0	0	0	0	0	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8
2.5°	3116.4	3152.1	3156.6	3134.3	3125.4	3112.1	3143.2	3121.0	3129.9	3121.0	3116.4
5°	3076.4	3116.4	3121.0	3121.0	3112.1	3107.5	3121.0	3116.4	3112.1	3103.2	3116.4
7.5°	3058.6	3080.8	3103.2	3076.4	3089.7	3085.3	3116.4	3103.2	3098.6	3098.6	3089.7
10°	3067.5	3063.0	3080.8	3054.1	3063.0	3054.1	3080.8	3080.8	3071.9	3063.0	3058.6
12.5°	2996.0	3031.7	3031.7	3027.3	3018.4	3004.9	3031.7	3049.7	3022.8	3022.8	3018.4
15°	2956.0	2964.9	2969.3	2969.3	2964.9	2973.8	2987.1	2969.3	2973.8	2951.5	2960.4
17.5°	2911.4	2893.6	2906.9	2898.0	2902.5	2911.4	2929.3	2929.3	2902.5	2898.0	2906.9
20°	2808.8	2862.3	2866.9	2840.1	2844.5	2844.5	2875.8	2849.0	2866.9	2844.5	2853.4
22.5°	2759.7	2795.4	2799.9	2764.3	2786.5	2759.7	2791.0	2750.8	2795.4	2764.3	2777.6
25°	2697.3	2693.0	2706.2	2688.4	2693.0	2693.0	2715.2	2697.3	2710.8	2693.0	2697.3
27.5°	2594.9	2630.6	2626.0	2608.2	2617.1	2612.7	2657.3	2608.2	2634.9	2612.7	2621.7
30°	2505.6	2536.9	2528.0	2510.1	2510.1	2496.7	2545.8	2532.3	2528.0	2528.0	2523.4
32.5°	2416.5	2421.0	2412.1	2416.5	2421.0	2403.2	2443.2	2425.4	2421.0	2425.4	2429.9
35°	2296.0	2296.0	2305.0	2291.7	2309.5	2309.5	2345.2	2322.8	2318.4	2305.0	2318.4
37.5°	2189.1	2175.8	2180.2	2180.2	2189.1	2198.0	2215.8	2206.9	2206.9	2193.6	2202.5
40°	2046.5	2037.5	2050.8	2050.8	2064.3	2064.3	2082.1	2073.2	2086.5	2086.5	2086.5
42.5°	1921.7	1921.7	1912.8	1926.0	1930.6	1926.0	1957.3	1952.8	1957.3	1948.4	1952.8
45°	1787.8	1787.8	1778.9	1774.5	1796.7	1792.3	1828.0	1814.5	1832.4	1823.4	1828.0
47.5°	1605.0	1627.3	1613.9	1627.3	1654.1	1658.6	1680.8	1671.9	1689.7	1676.5	1694.3
50°	1431.2	1431.2	1444.5	1462.4	1489.1	1493.6	1520.4	1538.2	1547.1	1551.5	1556.0
52.5°	1248.4	1243.9	1257.3	1279.5	1301.9	1319.7	1346.5	1373.2	1391.0	1417.8	1404.3
55°	1034.3	1043.2	1056.7	1083.4	1119.1	1141.3	1163.7	1199.3	1230.6	1243.9	1270.6
57.5°	851.5	842.6	851.5	887.2	927.4	945.2	976.5	1012.1	1056.7	1083.4	1092.4
60°	659.8	664.3	673.2	704.5	735.6	762.4	775.8	833.7	873.9	900.6	918.5
62.5°	486.1	495.0	503.9	530.6	561.7	584.1	606.3	655.4	691.1	717.8	735.6
65°	338.9	343.3	356.7	370.0	401.3	423.5	441.3	481.5	517.2	539.5	552.8
67.5°	209.6	213.9	222.8	240.8	263.0	280.9	298.7	325.4	356.7	378.9	383.5
70°	107.0	111.5	115.9	129.3	147.2	156.1	169.4	191.7	213.9	231.8	240.8
72.5°	35.7	35.7	40.2	49.1	58.0	66.9	71.3	93.7	111.5	120.4	124.8
75°	8.9	8.9	8.9	8.9	8.9	13.5	13.5	26.7	35.7	44.6	49.1
77.5°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	8.9	8.9
80°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8	3138.8
2.5°	3138.8	3129.9	3125.4	3129.9	3129.9	3125.4	3138.8	3156.6	3178.8	3121.0
5°	3134.3	3125.4	3134.3	3107.5	3121.0	3112.1	3129.9	3125.4	3143.2	3125.4
7.5°	3121.0	3103.2	3107.5	3094.2	3112.1	3089.7	3103.2	3129.9	3112.1	3085.3
10°	3076.4	3067.5	3098.6	3054.1	3045.1	3063.0	3098.6	3071.9	3063.0	3071.9
12.5°	3031.7	3031.7	3045.1	3009.5	3013.9	3022.8	3040.6	3022.8	3031.7	3054.1
15°	2982.7	2973.8	2996.0	2969.3	2964.9	2956.0	2973.8	2973.8	2982.7	2969.3
17.5°	2924.7	2911.4	2911.4	2902.5	2898.0	2920.3	2929.3	2933.6	2938.2	2920.3
20°	2853.4	2849.0	2862.3	2849.0	2853.4	2858.0	2858.0	2849.0	2889.1	2840.1
22.5°	2777.6	2791.0	2773.2	2764.3	2773.2	2782.1	2782.1	2786.5	2777.6	2768.6
25°	2701.9	2710.8	2715.2	2688.4	2701.9	2688.4	2719.7	2724.1	2706.2	2715.2
27.5°	2634.9	2621.7	2617.1	2599.3	2608.2	2603.8	2608.2	2608.2	2634.9	2599.3
30°	2532.3	2519.1	2523.4	2510.1	2514.5	2510.1	2514.5	2514.5	2532.3	2528.0
32.5°	2434.3	2421.0	2425.4	2412.1	2412.1	2416.5	2407.6	2407.6	2421.0	2412.1
35°	2340.6	2309.5	2313.9	2309.5	2313.9	2296.0	2296.0	2291.7	2300.6	2278.2
37.5°	2206.9	2193.6	2189.1	2184.7	2189.1	2180.2	2189.1	2175.8	2189.1	2171.3
40°	2086.5	2077.6	2082.1	2055.4	2055.4	2059.7	2050.8	2046.5	2050.8	2068.7
42.5°	1966.2	1948.4	1939.5	1930.6	1935.0	1921.7	1917.1	1908.2	1917.1	1899.3
45°	1823.4	1823.4	1819.1	1796.7	1801.3	1801.3	1783.4	1765.6	1770.0	1770.0
47.5°	1694.3	1685.4	1680.8	1658.6	1654.1	1649.7	1631.7	1618.4	1618.4	1605.0
50°	1551.5	1542.6	1529.3	1506.9	1498.0	1471.3	1458.0	1440.2	1422.3	1422.3
52.5°	1417.8	1386.5	1368.7	1333.0	1319.7	1306.3	1270.6	1257.3	1243.9	1230.6
55°	1257.3	1230.6	1194.9	1154.8	1136.9	1114.6	1078.9	1052.2	1034.3	1038.9
57.5°	1101.3	1056.7	1021.0	967.6	945.2	931.7	896.1	860.4	842.6	842.6
60°	909.5	873.9	829.3	780.2	762.4	740.2	695.4	673.2	659.8	646.5
62.5°	726.7	700.0	659.8	597.4	584.1	561.7	530.6	503.9	490.4	490.4
65°	543.9	517.2	481.5	436.9	419.1	401.3	374.5	347.8	334.3	330.0
67.5°	383.5	352.2	321.1	285.4	272.0	263.0	236.3	218.5	209.6	205.0
70°	231.8	213.9	191.7	165.0	151.5	142.6	124.8	111.5	107.0	102.6
72.5°	120.4	107.0	89.1	71.3	62.4	53.5	44.6	35.7	31.3	31.3
75°	44.6	35.7	22.4	13.5	8.9	8.9	8.9	8.9	8.9	8.9
77.5°	8.9	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
80°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)